Qingming Zhang

From: Jennifer F. Brouillette <jennifer.brouillette@c-ka.com>
Sent: Friday, September 23, 2016 3:14 PM
To: Qingming Zhang
Cc: Kerry D. Brouillette
Subject: AI# 4634
Attachments: LOOP Fug Calc 092316.pdf; Section 12.pdf

Activity No. PER20160001
AI No. 4634
LOOP Port Complex

Qingming,

As we discussed, please find attached a reconciled emissions estimate for the fugitives emissions source as well as a revised EIQ sheet and an updated Section 12 from the application form.

Please let me know if you have any questions.

Thank you,

Jennifer F. Brouillette
Environmental Scientist

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Potential to Emit

LOOP LLC Port Complex
Lafourche Parish, Louisiana

Source ID: **FUG001**
10-78 Fugitive Emissions

Given:

Component Type	Service	Component Count
valves	Heavy liquid (HL)	195
pump seals	Heavy liquid (HL)	156
flanges	Heavy liquid (HL)	1,209

Note: Component counts were increased by 30% to account for additional tanks.

Calculation Methodology:
VOC Average Hourly Rate [lb/hr] = API Emission Factor [kg/component-hr] x Component Count * Conversion Factor [2.20462 lb/kg]
VOC TAP Speciate Hourly Rate [lb/hr] = Liquid Mass Fraction x Total VOC Average Hourly Rate [lb/hr]
Max Hourly Rate [lb/hr] = Average Hourly Rate [lb/hr]
Annual Emission Rate [tpy] = Average Hourly Rate [lb/hr] / Conversion Factor [2000 lb/ton] x Annual Operating Hours

Reference:
Emission Factors for Oil and Gas Production Operations , Table 9, Publication Number 4615, American Petroleum Institute, January 1995

Emission Calculation:

Component Type	Heavy Crude Emission Factor [kg/component-hr]	Average Hourly Rate [lb/hr]	Max Hourly Rate [lb/hr]	Annual Emission Rate [tpy]
valves	0.000013	0.01	0.01	0.02
pump seals	NA	--	--	--
flanges	0.000022	0.06	0.06	0.26
	Total VOC	**0.06**	**0.06**	**0.28**

VOC TAP Speciation	Liquid Mass Fraction[(1)]	Average Hourly Rate [lb/hr]	Max Hourly Rate [lb/hr]	Annual Emission Rate [tpy]
Benzene	0.0060	0.0004	0.0004	0.0017
Ethylbenzene	0.0040	0.0003	0.0003	0.0011
n-Hexane	0.0040	0.0003	0.0003	0.0011
Toluene	0.0100	0.001	0.001	0.0028
Xylenes	0.0140	0.001	0.001	0.0039
Cumene (Isopropyl benzene)	0.0010	0.0001	0.0001	0.0003
Iso-octane	0.0010	0.0001	0.0001	0.0003

Notes:
(1) VOC TAP Speciation Profile from TANKS 4.09.d for Crude Oil (RVP 8).

State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants

Date of submittal: Sept 2016

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
10-78	Fugitive Emissions (Clovelly Dome)	Method: 27,"Unknown" Datum: NAD27
Tempo Subject Item ID No.: FUG0001		UTM Zone: 15 Horizontal: mE Vertical: mN
		Latitude: ° ' " hundredths
		Longitude: ° ' " hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above Grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Process Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
no	N/A ft ft^2	N/A ft	N/A ft/sec	N/A ft^3/min	N/A °F	8,760 hr/yr	constructed	25%	25%	25%	25%

Fuel	Type of Fuel Used and Heat Input (see instructions)		
		Type of Fuel	Heat Input (MMBTU/hr)
	a		
	b		
	c		

Notes

Operating Parameters (include units)	Parameter	Description
Normal Operating Rate/Throughput		
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		

Tanks: Fixed Roof | Floating Roof | External | Internal

Date Engine Ordered | | | Engine Model Year | |

Date Engine Was Built by Manufacturer | | |

SI Engines: Rich Burn | Lean Burn | 2 Stroke | 4 Stroke

Emission Point ID No. (Designation)	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)			
Total VOC (including those listed below)				0.06	0.06	0.28	<0.01	C		ppm by vol
Benzene			00071-43-2	<0.001	<0.001	<0.01		A		ppm by vol
Ethyl benzene			00100-41-4	<0.001	<0.001	<0.01		A		ppm by vol
n-Hexane			00110-54-3	<0.001	<0.001	<0.01		A		ppm by vol
Toluene			00108-88-3	<0.001	<0.001	<0.01		A		ppm by vol
Xylene (mixed isomers)			01330-20-7	<0.001	<0.001	<0.01		A		ppm by vol

12. Proposed Project Emissions [LAC 33:III.517.D.3]

List the total emissions following the proposed project for this facility or process unit (for process unit-specific permits). Speciate all criteria pollutants, TAP, and HAP for the proposed project.

Pollutant	Proposed Emission Rate (tons/yr)
PM_{10}	0.50
$PM_{2.5}$	0.50
SO_2	0.43
NO_x	10.94
CO	2.41
VOC	418.26
2,2,4-Trimethylpentane	0.22
Benzene	2.49
Cumene	0.04
Ethylbenzene	0.27
n-Hexane	2.61
Toluene	1.37
Xylene	0.79